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THE BOA CONSTRICTOR.

[Attack of the Boa Constrictor on a Sleeping Lascar.]

"The immense number of venomous snakes in all parts of India are a vast check to the enjoyment of every person residing there; to the timorous, apprehension and fear attend every step; even within their houses there is danger of meeting with them; and the most courageous and strong-minded cannot help often feeling uneasy at the presence of these reptiles*." The largest of these terrible creatures is the boa constrictor; but it is not considered by the natives the most formidable, because its bite is not venomous, and its great size somewhat diminishes the danger of surprise. Some account of the boa constrictor has been already given in No. 36 of the 'Penny Magazine,' and, in our present statement, we shall, as much as possible, avoid repeating the information already supplied.

The name *boa* is not of recent introduction. It occurs in Pliny, who doubtless intended by it some one of the larger species of European snakes; the name being probably derived from the notion, which is still very common among the peasantry of Europe, that these reptiles introduce themselves among the herds to suck the cows. The place which the boa should occupy in a regular system is not well determined, and this arises from the circumstance that travellers have entered much into the history and habits of the larger species of serpents without carefully describing the animals themselves. We cannot enter minutely into the question, but shall be content to follow Blumenbach in stating that the enormous reptile usually called the boa constrictor is found in the East Indies and in Africa, and does not appear to differ much from the Amaru of South America, which was worshipped by the Antis of Peru. It is the largest of serpents. Its average length appears to be about thirty feet, but it sometimes attains to forty, fifty, or even sixty feet; it therefore occupies the relative position among reptiles which the elephant does among quadrupeds, and the whale among the inhabitants of the sea. In the venomous species, the poison fangs are in the upper jaw,—somewhat larger than the other teeth, projected forward in the act of biting, but at other times disposed along the roof of the mouth. These are wanting in the boa, but otherwise the teeth are disposed much in the same manner as in other serpents,—being long, sharply pointed, and inclined backward;—of no use for mastication, but evidently intended only for the purpose of holding the prey. The genus is distinguished by having a hook on each side the vent; the body is compressed, inflated towards the middle; the tail is prehensile; the scales small, particularly upon the back of the head. The ground colour of the boa constrictor is yellowish-grey, with a large chestnut-coloured interrupted chain, extending down the back from the head to the tip of the tail, and sub-trigonal spots down the sides. The name "constrictor" is derived from the terrible muscular power by which it crushes to death the unfortunate animals embraced in its folds. It is true that most serpents possess, in some degree, this constrictive power, but it is not commonly used by the smaller species in seizing their prey, the mouth and teeth alone sufficing for the purpose.

Requiring food only at long intervals, the boa constrictor, like most other serpents, spends the greater part of its life coiled up asleep, or in a state of stupor, in which, if it has recently been gorged with food, it may be overcome with little danger or difficulty, although to attack it in an active state would be madness. But when it becomes hungry, the gigantic reptile assumes an activity strikingly in contrast with the loggish inertness it before exhibited. When properly in wait for prey, it usually attaches itself to the trunk or branches of a tree, in a situation likely to be visited by quadrupeds for the sake of pasture or water. In this posture it swings about, as if a branch or pendent of the tree, until some unhappy animal approaches, and then, suddenly relinquishing its position, it seizes the unsuspecting victim, and coils its body spirally around the throat and chest. After a few ineffectual cries and struggles, the poor entangled animal is suffocated and expires. It is to be remarked that, in producing this effect, the serpent does not merely wreathe itself around the prey, but places fold over fold, as if desirous of adding as much weight as possible to the muscular effort; these folds are then gradually tightened with such immense force as to crush the principal bones, and thus not only to destroy the animal, but to bring its carcase into a state the most easy for its being swallowed. This having been effected, the boa addresses himself to the task of swallowing the carcase. Having pushed the limbs into the most convenient position, and covered the surface with its glutinous saliva, the serpent takes the muzzle of the prey into its mouth, which is capable of vast expansion; and, by a succession of wonderful muscular contractions, the rest of the body is gradually drawn in, with a steady and regular motion. As the mass advances in the gullet, the parts through which it has passed resume their former dimensions, though its immediate position is always indicated by an external protuberance. Their prey generally consists of dogs, goats, deer, and the smaller sorts of game. Bishop Heber considers as quite untrue the stories of their attacking such large animals as the buffalo or the chetah; but men are by no means exempt from their attacks. This is shown by the following anecdote, which, with the engraving in illustration, is copied, by permission, from the new volume of the 'Oriental Annual.' The original picture from which the engraving is taken was painted by Mr. W. Daniell, and is in the possession of the Baron de Noual de la Loyrie.

"A few years before our visit to Calcutta, the captain of a country ship, while passing the Sunderbunds, sent a boat into one of the creeks to obtain some fresh fruits which are cultivated by the few miserable inhabitants of this inhospitable region. Having reached the shore, the crew moored the boat under a bank, and left one of their party to take care of her. During their absence, the lascar, who remained in charge of the boat, overcome by heat, lay down under the seats and fell asleep. Whilst he was in this happy state of unconsciousness, an enormous boa constrictor emerged from the jungle, reached the boat, had already coiled its huge body round the sleeper, and was in the very act of crushing him to death, when his companions fortunately returned at this auspicious moment; and, attacking the monster, severed a portion of its tail, which so disabled it that it no longer retained the power of doing mischief. The snake was then easily despatched, and found to measure sixty-two feet and some inches in length."

In Brazil, according to Koster, an opinion prevails that whoever has been bit by the boa constrictor has nothing to fear from any other snake. The notion is probably a prejudice.

* Johnson's 'Indian Field Sports,' p. 177.

CORFÙ.

Corfù is the most northern, and first in rank, though not the largest, of the seven islands which compose the republic of the Ionian Islands; and, from its strength and position, is considered the key of the Adriatic. It lies along the coast of Albania, from which it is separated by a channel, varying from twelve to thirteen miles wide. Its length, in the direction of north-west and south-east, is about thirty-five miles, and of a very irregular breadth; the surface is covered with mountains, moderately high, rugged, and detached, inter-

spersed with beautiful plains, thickly studded with olive groves and vineyards, and the scenery, if not very romantic, is certainly very pleasing. Compared with the natural advantages of this island, neither agriculture nor commerce are sufficiently extended,—partly consequent on the innate indolence of the natives, and partly on the restraints which have heretofore been imposed on them by their conquerors, the evil effects of which it will require some time to remove.

The town is situated on the eastern side of the island, about four miles from the Albanian coast; the entrance to the port is strikingly beautiful;—the imposing appearance of the batteries—the two lofty citadels which flank the town—the port gradually opening on the view—and the small island of Vido, formerly shaded with olive-trees, but now bristling with cannon—all announce the approach to a place of great importance. To the eastward are seen the rugged mountains of Albania, with the stupendous range of Pindus soaring above them, and adding magnificence to the beauty of the scenery which the island itself presents. The bay offers a secure anchorage for any number of vessels of the largest class, and is easily accessible either from the northward or southward; the port is small, but there is a mole, within which galleys and small vessels can lie in the greatest safety. The Channel of Corfù, being surrounded by high land, is subject to calms; but, during the summer months, the sea-breeze generally prevails throughout the day, and alleviates the heat, which is otherwise intense, though the climate is, on the whole, very healthy. Thunder-storms, accompanied by vivid and dangerous lightning, are very common, and have frequently occasioned much damage.

Of late years, the town has been greatly improved;—sewers have been constructed, the roads macadamized, and the low, unhealthy houses and narrow streets begin to disappear before the more improved style of modern building. The streets are built with regularity: there are several good inns, a small theatre for the performance of Italian operas, and a vast number of churches, most of which have been built by private individuals. Of these the richest is that of St. Spiridione, where are deposited the remains of that saint, the patron of the town; his body (said to be preserved entire) is in a silver shrine, richly decorated with precious stones, and the Greeks, who are equally bigoted, credulous, and superstitious with those of the Latin Church, are continually making offerings to this shrine. The festival of this saint is celebrated with the greatest pomp; the procession is attended not only by the Greeks but by all the principal British residents—the garrison under arms, and saluted by the batteries. Thousands from all parts, not only of Corfù, but of the other islands, flock into the town for the occasion. The night of Holy Thursday is especially devoted to processions;—each church and chapel has its own, and a kind of emulation for excellence prevails, so that the blaze of wax tapers rivals the light of day. The season of the carnival is kept up with great gaiety. The religion of the state is that of the Greek Church, at the head of which is the protopapas, elected by the nobility and clergy; he possesses episcopal powers, but is dependent on the patriarch of Constantinople;—his term of office is only for five years, when he retires undistinguished from the body of the clergy, save by the privilege of wearing some peculiar ornament to his dress.

Between the citadel and the town is a fine esplanade, planted with trees, forming the evening promenade of the inhabitants, which is generally enlivened by one of the regimental bands; it is ornamented at one end by a very pretty Grecian fountain, and at the other stands the palace of St. Michael and St. George (recently erected of Maltese stone), the residence of the British Lord High Commissioner, and where the senate hold their sittings. The old Venetian palace, standing at the foot of the citadel, has been converted into an university, which was opened in 1824, on the most liberal principles, and the expenses of the student are but trifling. The dress of the professors is an imitation of the ancient Greek philosophers, and that of the students, also from the antique, is at once both picturesque and classical. The success of this institution is amply repaying the most ardent expectations of its founders,—the classes being crowdedly attended, and the number of students constantly increasing. The Venetian senate forbade all establishments for public education, and made every attempt to banish the Greek language from these islands, and thereby to destroy all spirit of nationality. The Italian was the language of all public acts,—of the bar, and of the pulpit—and latterly became generally in use in private society. Venetian manners and customs became prevalent, and, in the city, those who aspired to any consideration adopted the dress as well as the habits of their masters; so that, even to this day, the Greek costume is only worn by the lower orders, or the country people. Nevertheless, Corfù may now be considered as one of the chief seats of Greek literature, and the best elementary works in the Romaic have issued from its press.

The citadel commands the town and harbour, and is entirely isolated by a deep moat, which admits the sea on both sides; the base of the hill is entirely enclosed by walls, within which are the barracks, hospitals, storehouses, and magazines, also quarters for some of the officers attached to the government. On the highest of the two peaks is a well-illuminated lighthouse, recently erected, and a telegraph which, in the time of the French, communicated to another on the highest point of the island, and that to the coast of Italy. On the citadel is displayed the flag of the Republic, which has the Union of England in the upper canton of a blue field, in which is emblazoned a lion rampant, holding seven arrows, emblematical of the seven islands. The place is entirely garrisoned by British troops, which, by treaty, were to be supported from the revenues of the Republic, an expenditure to which they have not been found adequate. The greater part of the fortifications were built by the Venetians, with whom Corfù was a post of great importance from its convenient situation at the entrance of the Adriatic. The Island of Vido has, however, been strongly fortified by the British;—here is the lazaretto, where the performance of quarantine is strictly enjoined.

This island, formerly known by the names of Drapana, Scheria, Phœacia, and Corcyra, was originally colonized by the Corinthians, about 750 years before the Christian æra; they built a town, the remains of which may still be traced on the shores of the bay, immediately to the southward of the present port, where a suburb of the modern city now stands. It soon arrived at considerable importance, especially as a naval power, and it is remarkable that the first naval combat recorded in history occurred between this colony and the mother country. Homer notices them as the "well-rowing Corcyreans;" and about four miles to the southward of the town is a bay, where Ulysses is said to have landed after the Trojan war, in which is a rock still called "Ulysses' ship." In the Persian war, Corcyra sent sixty galleys to the Grecian fleet, and its alliance was courted by the various petty republics of the continent. That the Corcyreans were justly proud of their naval supremacy, we may infer from the circumstance of their coins bearing on the reverse the image of a vessel's prow. Of its antiquities nothing now remains except the ruins of a temple, probably to Neptune, which was discovered in 1823, situated on a bank, overlooking the sea, about two miles south of the town.

The Corcyreans submitted to Alexander, and remained subject to the kings of Macedon till they were delivered by the Romans in the time of Perses, from which period they enjoyed their liberty till the reign of Vespasian, when they underwent the common fate of the other Greek islands. In 1072 it was conquered by Robert Guiscard, one of the Norman chiefs then in Italy, who afterwards usurped the throne of Naples, to which kingdom Corfù remained long subject; but during the dissensions which agitated that country it threw off its allegiance, and placed itself under the protection of the Venetian Republic, in the year 1322. Venice was, however, obliged to pay the sum of 30,000 ducats for the quiet possession, in which they remained undisturbed till the year 1537, when 25,000 Turks landed under Barbarossa, but failed in their attempts to take the place. The island was governed by a Proveditore, and treated more like a conquered country than a colony. In 1716, the Turks made another unsuccessful attempt on Corfù. On the fall of the Venetian republic in 1797, it was seized by the French, and was ceded to them, by the treaty of Campo Formio, in the same year. Two years afterwards it was reduced by the combined fleets of Turkey and Russia, and constituted an independent republic under their mutual protection. In 1807 it again fell into the power of France, who retained it till 1814, when it surrendered to the British, and was placed under their protection by the treaty of Vienna in 1815, with the other islands forming this republic. The senate hold their sittings always at Corfù, under the authority of the British representative, termed the Lord High Commissioner, who chiefly resides in this island. Ali Pasha was exceedingly anxious to obtain possession of Corfù, not only for commercial purposes, but as a military barrier to his continental dominions.

As long as Corfù was in the hands of the Venetians its commerce was greatly shackled, both on account of the fear of Ottoman aggrandizement and their own monopolizing system, neither has it yet been able to recover its proper level. The chief exports are salt, olives, and oil; but the land produces excellent fruits, especially oranges, citrons, and grapes, with a great variety of vegetables; bees' wax and honey are also abundant. Grain and cattle are the principal imports, nearly to the amount of half the consumption, which are brought from the main land, and extensive fisheries were carried on in the channel, but these, with the salt-works, have latterly fallen greatly into decay. The population of the island is estimated at 50,000, about 15,000 of whom inhabit the city.

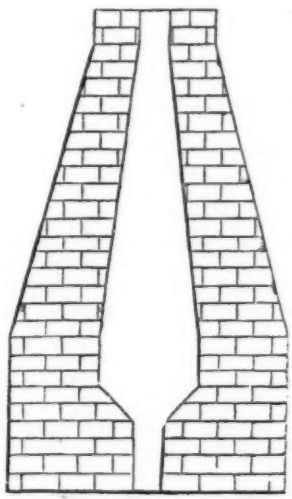
MINERAL KINGDOM.—Section XXIV.

Iron.—No. III.

Method of obtaining the Metal from Clay-Ironstone.—This ore has, as we have said, nothing metallic in its appearance; and no one unacquainted with chemistry would suspect that a bar of iron could be extracted from it, any more than they would conceive that a handful of the red earthy matter which we call rust could be forged into a metal. That rust is metallic iron combined with oxygen gas and carbonic acid gas, which it has absorbed from the atmosphere; and, in like manner, the metal is concealed in the ironstone in a state of combination with oxygen gas and carbonic acid gas. To separate it from these and the other foreign ingredients which enter into the composition of the ore constitutes the operation called *smelting* (a term derived from a German word signifying "to melt"), which consists in bringing the clay-ironstone in contact, under a very powerful heat, with other substances, which, having a stronger attraction for oxygen and carbonic acid than iron has, destroy the combination, and set the iron free.

The ore, when taken from the mine, is broken into small pieces about the size of an egg, and is then subjected to the process of *roasting*, which is performed by making a long oblong pile of the broken ore, with intervening layers of small coal, forming a heap about thirty feet long, fifteen feet broad, and five feet high,—sloping at the top like the ridge of a house. There is a thick layer of coal at the bottom, which is kindled when the pile is completed; the whole is gradually ignited, and then left to burn for five or six days, and, when cool, the ore is ready for the smelting-furnace. The roasted ore has changed its colour from grey to red, brown, or blackish-brown; has parted with its carbonic acid gas, as well as the sulphur, and other inflammable substances it may have contained, and has lost from twenty to thirty per cent. of its weight.

The furnace is usually a square pyramidal tower of strong masonry, or brick-work, from forty to fifty feet high, similar to the annexed figure:



When first kindled, the fire is made at the bottom of the interior cavity, which is gradually filled with a mixture of ore, coke, and limestone, in the proportions of four of coke, rather more than three of ore, and one of limestone. The heat is urged by compressed air being forced through tubes in the sides into the cavity, by means of powerful bellows, worked by a steam-engine. The mixture is in a highly heated state in the higher part of the furnace, and gradually sinks to that part where the heat, urged by the blast, is most intense, and then it becomes in a state of semi-fusion. Here the more complete decomposition takes place; and the mass being now fluid, the metal, by its greater specific gravity, sinks to the bottom, where it is allowed to run out, from time to time, by opening an aperture left for the purpose. This is *cast-iron*, and the ore yields on an average about thirty per cent. of it. It is conducted into moulds, made with dry sand, on the ground, near the orifice, for the various things made of cast-iron,—from vast beams, wheels, and cylinders of steam-engines, to the smallest articles of domestic use; or it is conducted into moulds for the bars of *pig-iron*,—the form in which cast-iron is sold as a raw material. The term "pig-iron," like many others in the arts, was given by the workmen, and, as may be supposed, it has not a very profound or refined etymology. The metal is run off into a main channel which they call the *sow*, and the bars at right angles to it they liken to pigs sucking the teats of the sow. As the ore sinks down, a fresh supply is poured in at the top of the furnace, which is kept

constantly going, and is never allowed to cool unless for the purpose of repair, or when it is *blown out*, as it is termed, by a stoppage of the works.

It will be observed that the coal is not used as it comes from the pit, but is first brought to the state of coke, or mineral charcoal, which is done by a process very similar to that employed for making charcoal from wood;—the coal being brought to a red heat, in heaps so covered as to prevent free exposure to the air, and thus the bitumen is driven off, leaving a cinder behind like that which remains in the retorts used at the gas-works. The coke serves not only as a fuel for producing the heat, but performs other important functions, for it attracts the oxygen from the ore, and enters into combination with the iron, in the state of pure carbon.

The purpose of adding the limestone is to facilitate the melting of the ore, the lime acting the part of a *flux*, as it is termed, from *fluxus*, a Latin word, signifying a flowing or streaming. There are certain mineral substances which, singly, will resist the action of the most violent heat, but, when mixed together, become fusible at comparatively low temperatures. Thus silica, or the earth of flints, is infusible in a very intense heat, but on the addition of a portion of the mineral alkali soda, it melts readily at a low heat and forms glass. The limestone acts upon the earths of flint and clay, which enter into the composition of the ore, in the same way as the soda acts in making glass from sand, and thus a fluid is obtained; and as the particles in the liquid mixture have free motion, the heavier ones, that is, the iron, sink to the bottom, and the lighter earthy matter rises to the top, and floats on the surface of the melted iron, forming what is called "slag." Any one passing by an iron-work must have noticed the heaps of glassy-looking matter, of various colours, thrown aside as rubbish, and which is often used for mending the roads in the neighbourhood;—this is the slag.

Simple as the above process of smelting may seem to be, great skill is required in conducting it, in order to obtain the greatest amount of metal and the best quality of iron which the particular ore is capable of affording. Clay-ironstone, as it was shown in the last section, is very various in quality, both as regards the quantity of iron it contains and the foreign ingredients with which that is mixed, and the process to which it is to be subjected in the smelting-furnace must be varied accordingly. What that is to be is determined by a series of trials, at first on the small scale, which is called an *assaying* of the ore, from the French verb *essayer*, "to make trial of." If the quantity of earthy matter exceeds fifteen per cent. the ore cannot be advantageously smelted by itself, and it is mixed with ore of a richer quality. Such a mixture is often advantageous on other accounts, for an ore that is difficult to melt by itself is fused with comparative ease when mixed with an ore of a different quality. The nature of the limestone is also a material consideration; for the effect of limestone as a flux depends not only on its own composition, which within certain limits is variable, but also on that of the ore with which it is to be mixed. Nothing but actual trial can determine what proportion of any particular limestone is best adapted to act as a flux upon any particular clay-ironstone.

Two hundred years ago all the iron ore of this country was smelted with wood-charcoal, but the consumption of wood was so enormous that the manufacture upon a large scale must have ceased had not a method been discovered of using coal instead by converting it into coke. As hard wood makes the best charcoal, so is a pit-coal which yields a compact, hard, heavy coke the best for the smelting-furnace, because a coke of that kind stands the blast best. It is very important also to select a coal as free as possible from sulphur in any shape.

We have mentioned that the heat of the furnace is urged by a blast of condensed air thrown in by means of a steam-engine. An improvement has lately been introduced at the Clyde Iron Works, which promises to be of immense advantage by materially reducing the cost of the smelting. This consists in sending in a blast of *hot*, instead of cold, air. When a blast of cold air is thrown in, a great part of the heat of the furnace is absorbed by the cold air, and therefore a large amount of the fuel is wasted. Now it has been found by experiment that the coal necessary to heat the air before it is thrown into the furnace is very considerably less than that which is required to afford the coke necessary to heat it after it is thrown in. Some successful experiments have also been made for smelting with the coal, and thus saving the waste of converting it into coke.

Cast-iron, or pig-iron, or crude-iron, for it is known by all these names, is not a pure substance, but contains usually about one forty-third part of its weight of carbon, which it obtains from the coke, or charcoal, in the process of smelting. The presence of carbon in its composition may be easily shown by dropping a little diluted muriatic acid on polished cast-iron, when the acid dissolves a portion of the iron, and a film of black carbon is left behind, because it is not soluble in the acid. The quantity of carbon depends a good deal upon the quality of the fuel; and if cast-iron be exposed in a melted state for a length of time to charcoal, and free access of oxygen be prevented, the iron will absorb so much carbon as to be converted into plumbago, or that substance commonly called *black-lead*, of which pencils are made, but which has not a particle of lead in its composition. Cast-iron is neither ductile nor malleable, but is, on the contrary, very brittle; and it melts with such facility at a red heat that it cannot be welded, whereas pure iron is one of the most infusible of the metals. It can be fused to such a degree of liquidity that it may be poured into very minute cavities, as we see by those beautiful ornaments, of the most delicate forms, manufactured at Berlin, and at Sain, near Neuwied, on the Rhine.

In our next section, we shall give some account of the mode of converting cast-iron into malleable iron, and of the other ores of this metal.

OPIUM.

Opium is a powerful inebriating and narcotic drug formed of the concrete juice of the poppy. This plant is well known in England, where, as well as in the southern countries of Europe, it is found growing wild, although it appears to have come originally from Asia. Opium is chiefly prepared from the poppy in India, Turkey, and Persia, in which countries it is carefully cultivated for that exclusive purpose. The white poppy is also extensively raised in France and other countries of Europe for the sake of its capsules, and of the useful and bland oil extracted from its seeds. The poppy has also been cultivated, and opium made, in England; but there seems little probability that it will ever be raised in this country to any considerable extent.

The process by which the drug is obtained from the plant is nearly the same in all the countries where it is cultivated. The plant is reared most extensively in India, and opium forms the staple commodity of many provinces, in which the following is the mode of treatment commonly used. It is an object of careful attention to keep the plants at a due distance from each other. If the seed happens to have been too thickly sown, some of the young plants are pulled up and used as potherbs; but when they have attained a foot and half in height they are considered unfit for that use, from their intoxicating nature. The plant flowers in

February, and the opium is extracted in March or April, according to the period of sowing. The white poppy affords a more abundant supply of opium than the red; but there is no apparent difference in the quality of the product. When the flowers have fallen, and the capsules assume a whitish colour, they are wounded with a three-toothed instrument, which is drawn from the top to the bottom of the capsule so as to penetrate its skin. This is done in the evening, and the opium is gathered the next morning. The wounds in each capsule are repeated for three successive days, and in general fifteen days suffice thus to wound all the capsules in a field, and to gather all the opium. From the incisions a milky juice exudes which thickens on exposure to the air, and is carefully scraped off with a shell or a small iron instrument previously dipped in oil. It is afterwards worked in an iron pot in the heat of the sun, until it is of a consistence to be formed into thick cakes of about four pounds weight. These are covered with the leaves of poppy, tobacco, or some other vegetable, to prevent their sticking together; and in this condition they are dried and packed away, for exportation, in chests lined with hides, each containing forty cakes and weighing about 150 lbs. The drug thus prepared brings in India about 15*s.* a pound.

The raising of opium is a business of much delicacy; the poppy being a very tender plant, liable to injury from insects, wind, hail, or considerable rain. The produce seldom agrees with what might be stated as the average amount, but generally runs in extremes. While one cultivator is disappointed, another is an immense gainer; and while one season will not pay the expenses of culture, another enriches all the cultivators. This circumstance renders the pursuit in the highest degree alluring, from the excitement, uncertainty, and hope connected with it.

The opium of India is, in the peculiar properties of the drug, inferior to that of Turkey. The latter is usually exhibited in flat pieces covered with leaves. It has a peculiar, strong, heavy, narcotic odour, with a bitter taste, accompanied by a sensation of acrid heat, or of biting, on the tongue and lips, if it be well chewed. Its colour when good is reddish-brown or fawn-coloured; and its texture is compact and uniform. When soft, it is tenacious, but it becomes hard from long exposure to the air, and breaks with an uniform shining fracture. East India opium is equally nauseous and more bitter to the taste than Turkey opium; but it is less acrimonious. It is also darker in its colour, and less plastic, but quite as tenacious. Good Turkey opium yields nearly three times the quantity of *morphia*, or of the peculiar principle of the drug, than that of India. The price of Turkey opium, in bond, was, in 1831, 17*s.* or 18*s.* a pound; and the duty amounted to 4*s.*

Opium is, in some form or other, very extensively used in Turkey, Persia, and India; but its greatest consumption is in China and the surrounding countries, where the habit of smoking it has become universal. The Chinese seethe or boil the crude drug, and by this process the resinous or gummy impurities are separated and the remaining extract only is reserved for use. A small ball of it, placed in a large wooden pipe with some combustible matter, is lighted, and the amateur proceeds to inhale four or five whiffs, when he lies down and resigns himself to his dreams, which are said to have no inconsiderable resemblance to the sensation produced by inhaling the oxide of azote. Those who do not carry this indulgence to excess, do not, it is said, experience any ill effects from it—but this is true of most indulgences properly moderated. The people of Borneo and Sumatra subject the drug to nearly the same preparation as the Chinese, and make use of it in much the same manner. The convivial excesses of the latter probably, in an equal degree, resemble those of the Sumatrans. At convivial parties among them, a dish of the prepared opium is brought in with a lamp; and then the host, taking a large pipe, puts into it one of the small balls we have mentioned. In smoking, the smoke which has been inhaled is blown out through the nostrils, and, if the smoker be an adept, through the passages of the ears and eyes. He seldom takes more than three or four whiffs before he passes it round to the rest of the company (one pipe serving them all), who act in the same manner, and thus continue smoking until the whole party is completely intoxicated.

The people of Java are addicted in a very remarkable degree to excess in the use of opium. Such of the natives or slaves as have been rendered desperate by the pressure of disappointment or misfortune give themselves up entirely to the baneful indulgence, until their minds are raised to a state of frightful excitement, or rather frenzy. In this state they rush forth with dreadful purposes against all by whom they think they have been wronged or offended. They run along shouting "Amok! amok!" or "Kill! kill!" and in their blind fury stab at every person they meet until self-preservation obliges the people to kill them as we kill a mad dog. This is what is termed "running a-muck." This is most commonly the result of the strong propensity of the people to gambling, by which they are often deprived of all they possess in the world, and, "worst loss of all!" even lose their own self-respect. The immediate destruction of the muck-runners is authorised by the law in Java.

In some parts of India, opium is presented at visits and entertainments in the same familiar manner as the snuff-box in Europe. There is in that country a class of persons who carry letters and run with messages through the provinces. With no other provision than a piece of opium, a bag of rice, and a pot to draw water from the wells, these men perform journeys that would scarcely be credited in this country. In the same manner the trackless deserts of the different countries between the Indus and Mediterranean are traversed by foot messengers by the aid of this drug, with a few dates perhaps, and a piece of coarse bread. The old traveller, Sir Thomas Herbert, very well describes this use of opium. "Opium (the juice of poppie) is of great use there also (in Persia): good, if taken moderately; bad, nay mortal, if beyond measure: but by practice they make that familiar which would kill us; so that their medicine is our poyson. They chaw it much,—for it helps catarrhs, cowardize, and the epilepsie; and, which is admirable, some extraordinary foot-posts they have who, by continual chawing this, with some other confection, are enabled to run day and night without intermission, seeming to be in a constant dream or giddiness, seeing but not knowing whom they meet, though well acquainted, and miss not their intended places, by a strange efficacy expulsing the tedious thoughts of travel, and rarely * for some dayes deceiving the body of its reasonable rest and lodging.'

The very extensive use of this drug in Turkey and Persia is no doubt in a great degree owing to the prohibition of intoxicating liquors by the Mohammedan law. It was a substitute for them. Accordingly the use of the drug has much declined in Turkey of late years, since those who would otherwise have been opium-eaters have learned to indulge in wine and arrack. Nevertheless, the occasional use of opium is far from having ceased, nor has the race of *Theriakis*, or habitual opium-eaters, become extinct, although a traveller may have been a considerable time in Constantinople without having seen one. They frequent the coffee-houses near Yeni-Kapoussi, and are there

* Rarely—wonderfully.

easily distinguished from the more temperate visiters of the place. Mr. Madden, in his 'Travels in Turkey,' &c., well describes the appearance which these pitiable objects present. "Their gestures were frightful. Those who were completely under the influence of opium talked incoherently; their features were flushed, their eyes had an unnatural brilliancy, and the general expression of their countenance was horridly wild. The effect is usually produced in two hours, and lasts four or five. The dose varies from three grains to a drachm. The debility, both moral and physical, attendant on its excitement is terrible: the appetite is soon destroyed, and every fibre in the body trembles; the nerves of the neck become affected, and the muscles get rigid,—I have seen several in this place who had wry necks and contracted fingers; but still they could not abandon the custom. They are miserable until the hour arrives for taking their daily dose." We cannot wonder at this. Habits of inebriety, even from ordinary stimulants, are not often overcome; and the visions of beauty and splendour which opium superadds, renders it all but impossible to relinquish the habitual indulgence which has once been created. They know that the indulgence shortens life, and that the opium-eater dies of old age in his youth. They know that one who begins at twenty rarely outlives thirty, and scarcely ever thirty-six. But this knowledge has no effect, and all remonstrance is unavailing. When a friend expostulates, the opium-eater answers with impatience at his ignorance, and with the cold and haughty pity of one who has the secret of happiness, of which the other knows nothing. To remonstrance we have known such answers given as this:—"Opium conveys me to Paradise: and when I come back to the world again I am miserable because I have been *there*; therefore I take opium that I may return thither."

In Persia the use of opium is now probably more general than in Turkey, although in that country it is rarely that any one gives himself up so entirely to the habit as the Turkish theriaki. There is nothing in Persia which so strongly reminds an Englishman of gin-drinking in his own country, as to observe in the bazaars groups of squalid, ragged, lean, and trembling figures (women as well as men), assembled in the morning around the opium stalls, and waiting with impatience until they receive their quantum of the pleasant poison. It is also remarked, in many of the large towns of that country, that the beggars in the streets beseech the passenger, by all that is holy and merciful, by all that a Moslem venerates, and by his hopes of salvation, to give a para to buy—not bread—but opium—opium to save him from death. Women in that country even give opium to their children to quiet them when they are crying.

In England, the Turkey opium is chiefly used, and is little employed except for medical purposes. The author of 'The English Opium-Eater,' who describes with great intensity the delights and miseries of habitual opium-taking, considered that it was coming into use in this country as an exhilarant and inebriant as well among the working class as among sedentary men. But this statement does not appear to be confirmed by the official accounts of the quantity consumed. On the average of the last five years, about 28,000 lbs. have yearly been retained for home consumption in this country; and this quantity does not indicate an increase in the consumption much greater than the medical wants of an increased population might be supposed to demand. The duty was lowered to its present amount in 1828; previously it was 9*s.* in the pound.

Bacon.—Bacon thought himself born for the use of mankind; and, in one of his letters to Father Fulgentio, he styles himself "the servant of posterity."

SUBTERRANEAN PASSAGES AT ELTHAM PALACE.

The following account of these recently-discovered passages is taken from a small pamphlet lately published at Greenwich.

The kings of England had a palace at Eltham at a very early period; and viewing the extensive excavations, with the decoys, &c., and connecting them with the history of the reign of Henry III., when this mode of security and defence was employed, it is probable the palace was first built by this king. Tradition has always kept up a belief of the existence of an underground passage to Blackheath, Greenwich, or the river; and it was affirmed in the neighbourhood that, at Middle Park, connected with these passages, there were one or more apartments underground for sixty horses.

Under the ground-floor of one of the apartments of the palace, a trap-door opens into a room underground, ten feet by five feet; and, proceeding from it, a narrow passage, of about ten feet in length, conducts the passenger to the series of passages, with decoys, stairs, and shafts, some of which are vertical, and others on an inclined plane, which were once used for admitting air, and for hurling down missiles and pitch-balls upon enemies, according to the mode of defence in those ancient times; and it is worthy of notice that, at points where weapons from above could assail the enemy with the greatest effect, there these shafts verge and concentrate. About 500 feet of passage have been entered, and passed through, in a direction west, towards Middle Park, and under the moat for 200 feet. The arch is broken into in the field leading from Eltham to Mottingham, but still the brick-work of the arch can be traced farther, proceeding in the same direction. The remains of two iron gates, completely carbonized, were found in that part of the passage under the moat; and large stalactites, formed of super-carbonate of lime, hung down from the roof of the arch, which sufficiently indicate the lapse of time since these passages were entered.

The newspapers state that the discovery of these passages has revived many half-forgotten stories of similar labyrinths elsewhere. Such a passage is said to exist beneath St. John's Gate, Clerkenwell, extending by one branch to the vaults of St. James's Church, and by another to Canonbury House, Islington, formerly a favourite residence of Queen Elizabeth; and another to Aldgate. There may have been such passages, but that they ever extended so far, or that they now exist, is not very likely.

Dutch Clerks.—Even an English merchant would be astonished to see the wonderful arithmetical attainments of stripling clerks in any of the Dutch counting-houses, and the quantity of complicated business which they discharge in the course of the day,—the order of their books, the rapidity and certainty of their calculation, according to the commercial habits and exchange of different countries, and the variety of languages which they speak; to which may be added the great regularity and length of their attendance, and the decency and propriety of their deportment.—*Carr's Tour through Holland.*

DELAY.

. . . . . Delay in close awaite
Caught hold on me, and thought my steps to stay,
Feigning full many a fond excuse to prate,
And time to steal, the treasure of man's day;
Whose smallest minute lost no riches render may.

Spenser.

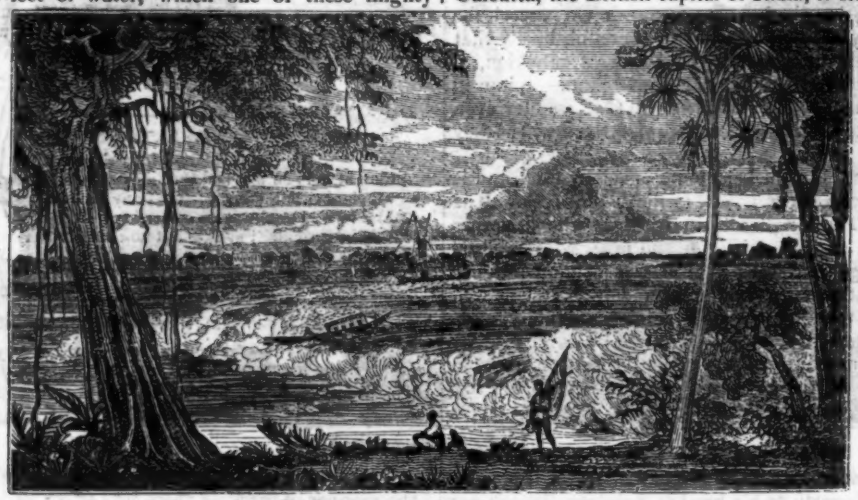
INDIAN RIVERS.

'The Hindoos' is the title of a new volume of the 'Library of Entertaining Knowledge.' It furnishes, in a popular form, a careful and interesting digest of a vast quantity of dispersed information concerning a country under British dominion, and concerning a people who are our fellow-subjects, and whose history, character, and condition ought therefore not to be indifferent to us. The measures which have recently been taken to ameliorate the condition of the Hindoos, and the attention which has been directed towards India upon the recent alteration of the Company's Charter, seem to render such a publication as the present peculiarly desirable and opportune. From the many pleasing embellishments which the volume contains, we have selected

the annexed wood-cut; and the following explanatory matter is abridged from an account of the rivers of India, in the first chapter.

The rivers of India have always been more celebrated than its mountains. Every person throughout the civilized world is familiar with the names of the Indus and the Ganges, those holy streams which seem to the superstitious Hindoo, as the Nile appeared to the Egyptian, to be of divine origin. They are certainly among the most precious gifts which Nature has bestowed upon Hindoostan. By their means, and that of numerous tributary or inferior rivers, an amazing degree of fertility is maintained in the country, and which from time immemorial has not only supplied a vast population with its produce, but has been enabled to satisfy the wants of the rest of the world with its superfluities. To us in England it is difficult to form an idea of those "ocean streams," which, in a course in some instances of nearly two thousand miles, collect the waters of a thousand rivers, and at length flow in channels of several leagues in breadth to the sea. In the level lands of Bengal, rivers cannot, of course, possess very lofty banks; but palaces, temples, and palm-trees of gigantic size shoot up from the water's edge, and are visible to a great distance; yet in sailing up and down these majestic streams the eye is frequently unable to descry the opposite banks. Except in the rainy season the surface of the waters, rarely ruffled with winds, is as smooth as a mirror, and beautifully reflects the glorious hues which dawn or sunset spreads over the tropical skies, with the lazy, lingering sail floating like a dream over its surface. Towards the mouth, however, this tranquillity is twice a day disturbed by the tide, which, particularly in the Indus, rushes with indescribable violence against the stream with what is commonly called the *mascaret* or *bore*, and endangers the banks which encounter it. It was this phenomenon that astonished the soldiers of Alexander, who, accustomed to the tideless waves of the Mediterranean, knew not how to account for this war of waters, which travellers have described with wonder, and poets, ever in search of new imagery, have invested with the pomp of imagination; but words fail to convey an adequate idea of the awe and terror it inspires when, bursting in thunder, it shakes the shores like an earthquake. Still less can the calculation of the number of the cubic feet of water, which one of these mighty streams hurls headlong every moment against the opposing waves of the ocean, give any conception of the magnificent struggle, to witness which alone is worth a pilgrimage to the Indus or the Orellana.

Of all the rivers of India, the Ganges is the most sacred. It is, in the estimation of the natives, a god; and the most secure way to Heaven is through its waters. Hence, whenever this is possible, the Hindoo comes to its banks to die, and piously drowns in it his parents and relations to ensure their eternal happiness. With the converse of the feeling of the Ghiber, who would consider the eternal fire—the object of his worship—polluted by the touch of a corpse, the Hindoo casts the dead naked into the sacred stream; so that those who sail upon the Ganges have often to make their way through shoals of livid corpses, floating down in various stages of corruption and decay towards the sea. This stream rises among the roots of the Himalaya mountains, on the Indian side of the range. It very soon becomes of considerable depth, and navigable for the light barks of the country, but before the confluence with the Jumna it is fordable in many places. The depth of the Ganges is not materially influenced by the melting of the snows, though, like all other tropical rivers, it overflows the surrounding plains, in some places, for more than a hundred miles in extent; at which time nothing is visible but the lofty palm-trees, the villages, which are built on elevated sites, and a few mounds, the sites of ruined hamlets. Travelling is at this period performed in boats, in which the Hindoo skims over his rice-fields and gardens, which are then imbibing the moisture necessary to their fertility. The prospect is singular but monotonous, as every field is similar to the next, and the appearance of the country upon the subsidence of the waters is anything but picturesque. At the distance of five hundred miles from the sea, the Ganges is thirty feet deep at low water, and never becomes shallow until at its mouth, the bars and banks of sand thrown up by the contending waters of the rivers and the sea, choke its channel and render it unnavigable to large vessels. At the distance of two hundred miles from the sea, the river separates into two branches; the eastern, which flows towards the south-east, retaining the original appellation, and the western branch assuming the name of the Hoogly. Upon the latter, which is navigable by the largest ships, Calcutta, the British capital of India, is situated.



The Bore: coming in of the Tide on the Ganges.

*** The Office of the Society for the Diffusion of Useful Knowledge is at 59, Lincoln's Inn Fields.
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